

U.S. Patent Application Serial No. 10/030,134
Response dated December 16, 2003
Reply to OA of July 16, 2003

REMARKS

Claims 1-12 are pending in this application. No amendment has been made herein.

Claims 3 and 12 are objected to because of the following informalities: “dyn/cm” should be “dyne/cm”. (Office action paragraph no. 1)

The objection to claims 3 and 12 is respectfully traversed.

Applicants submit that “dyn” is a standard abbreviation of “dyne”. In demonstration of this point, Applicants attach a copy of page 487 of “Concise Encyclopedia of Polymer Science and Engineering”. This document shows in Figure 2, at page 487, that the unit mN/m corresponds to “dyn/cm”.

Accordingly, the claims have not been amended.

Claims 1-3, 5-6, 8 and 12 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Akao et al. (U.S. Patent No. 6,069,196). (Office action paragraph no. 4)

The rejection of claims 1-3, 5-6, 8 and 12 is respectfully traversed.

The Examiner states that Akao et al. teaches a molded article which is also a container body for a photographic film formed of a polyethylene resin composition and an alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine, or a combination thereof (equivalent to an alicyclic structure-containing polymer) as in patented claim 12.

U.S. Patent Application Serial No. **10/030,134**
Response dated December 16, 2003
Reply to OA of **July 16, 2003**

Applicants note that the alicyclic structure-containing polymer making up the molding as recited in the present claims is a polymer which has an alicyclic structure **in a repeating unit of the polymer** (page 20, lines 16-19). Examples of the alicyclic structure include a cycloalkane structure and a cycloalkene structure.

By contrast, “an alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine” as disclosed in Akao et al. is not a polymer but a low molecular weight chemical compound. This compound can not be polymerized.

In particular, the Examiner cites claim 12 of Akao et al. as disclosing an alicyclic structure-containing polymer. Applicants note that this is the only portion of Akao et al. to use the word “alicyclic”. Claim 12 of Akao et al. reads as follows:

“12. The molded article of claim 1 which is a container body for a photographic film formed of a polyethylene resin composition having a haze of not more than 50% comprising not less than 50 parts by weight of a homopolyethylene resin, an ethylene- α -olefin copolymer resin or a combination thereof having a melt flow rate of 5 to 80 g/10 min, a density of 0.941 to 0.985 g/cm³, a crystallinity of not less than 75% and a bending rigidity of not less than 6,000 kg/cm², and 0.01 to 5 parts by weight of an organic nucleating agent consisting of an eutectic compound of a carboxylic acid having a number of carbon atoms of not less than 3 and a nitrogen-containing heterocyclic compound having an amino group or a hydroxyl group at the α -position, an alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine, or a combination thereof.”

Here, the composition is a polyethylene resin with at least 50 parts of homopolyethylene resin. The alicyclic carboxylic acid amide is an **organic nucleating agent**, which is not actually part of the polymer. The nucleating agent is discussed starting in column 20, line 30, of the reference, listing a great number of possible nucleating agents, none of which appears to be alicyclic.

U.S. Patent Application Serial No. 10/030,134
Response dated December 16, 2003
Reply to OA of July 16, 2003

That is, Akao et al. discloses a molded article which is a container body for a photographic film formed of a polyethylene resin composition (claim 12). The polyethylene resin composition comprises

i) not less than 50 parts by weight of a homopolyethylene resin, an ethylene- α -olefin copolymer resin or a combination thereof, and

ii) 0.01 to 5 parts by weight of an organic nucleating agent.

Polyethylene resin has an ethylene unit ($-\text{CH}_2-\text{CH}_2-$) as a repeating unit. Ethylene- α -olefin copolymer resin has two repeating units derived from ethylene and α -olefin. None of these polymers has an alicyclic structure in a repeating unit of the polymer. The alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine is one of the possible organic nucleating agents which are added to the polyethylene resin component. The alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine is not a polymer and does not polymerize. Thus, the polyethylene resin composition containing the alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine is not an alicyclic structure-containing polymer.

Therefore, Akao et al. neither teaches nor suggests an alicyclic structure-containing polymer as recited in the present claims, and there is no anticipation or *prima facie* case of obviousness of the claims over Akao et al.

Claims 4 and 9-11 are rejected under 35 U.S.C. 103(a) over Akao et al. (U.S. Patent No. 6,069,196) in view of Takahashi et al. (U.S. Patent No. 5,437,926). (Office action paragraphs no.

U.S. Patent Application Serial No. 10/030,134
Response dated December 16, 2003
Reply to OA of July 16, 2003

5-7)

The rejection of claims 4 and 9-11 is respectfully traversed.

The Examiner asserts that it would have been obvious to one of ordinary skill in the art to modify the molded article of Akao to include a norbornene polymer of a dicyclopentadiene type polymer because Takahashi teaches such polymers are used for molded or formed material making it possible to form a hard coat layer having greatly improved adhesion strength to a surface of thermoplastic saturated norbornene polymer molded article at col. 3, line 24, to col. 4, line 50.

The Examiner's rejection involves substitution of Takahashi's saturated norbornene polymer for the resin composition of Akao et al. However, as argued above, Akao et al. neither teaches nor suggests an **alicyclic structure-containing polymer** as recited in the present claims.

Moreover, Applicants assert here is no suggestion or motivation in Akao et al. for the proposed substitution of Takahashi's polymer. The alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine in Akao's claim 12 cannot be substituted by Takahashi's polymer.

Takahashi et al. discloses a thermoplastic saturated norbornene polymer molded or formed article provided with a hard coat layer. However, the hard coat layer is not a patterned ink layer as recited by the present claim 1. All of the surface of the article is coated with a hard coating agent, and then the coating is cured with UV ray.

Takahashi et al. discloses the following:

"The thermoplastic saturated norbornene polymer is one of the olefin resins and the surface

U.S. Patent Application Serial No. **10/030,134**
Response dated December 16, 2003
Reply to OA of **July 16, 2003**

of a molded or formed article thereof has poor wettability and high chemical resistance. Therefore, neither of the polymer and the hard coating agent is mutually diffused into another's phase through the interface thereof, and molecular entanglement hardly occurs. As described above, the thermoplastic saturated norbornene polymer is one of the material which are as difficult to bond or treat with a chemical as olefin resins such as polyethylene and polypropylene are." (col. 3, lines 3-14).

Thus, Takahashi et al. neither teaches nor suggests that the moldings formed from an alicyclic structure-containing polymer such as a thermoplastic saturated norbornene polymer can be provided with a patterned ink layer excellent in adhesion and hard to cause interfacial separation, deformation, discoloration even when they are left to stand for a long period of time under high-temperature and high-humidity environment.

Applicants therefore assert that claims 4 and 9-11 are novel and non-obvious over Akao et al. and Takahashi et al., taken separately or in combination.

Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akao et al. (U.S. Patent No. 6,069,196) in view of JP Abstract 08-094852 to Hironobu. (Office action paragraphs no. 8-9)

The rejection is respectfully traversed. Applicants respectfully note that the Examiner apparently meant to reject claims 6 and 7, as no rejection of claim 7 appears in the Office action.

Applicants again submit that Akao et al. does not disclose or suggest an **alicyclic structure-containing polymer** as recited in the present claims.

The alicyclic carboxylic acid amide compound of a divalent or polyvalent aliphatic amine

U.S. Patent Application Serial No. 10/030,134
Response dated December 16, 2003
Reply to OA of **July 16, 2003**

in Akao's claim 12 cannot be substituted by Hironobu's polymer. Moreover, the Examiner has not stated any suggestion or motivation to substitute Hironobu's norbornene based resin for Akao's polymer.

The Examiner states that Akao et al. "does not teach the invention used as a back light in a liquid crystal display. However, Hironobu teaches a light transmission plate for LCDs where the plate is of a thermoplastic norbornene based resin ..." Applicants submit that the fact that Hironobu's resin is used for making light **transmission** plates, while Akao et al. discloses light-**shielding** containers for photosensitive material, would appear to argue against substitution of materials between these references.

Applicants also note that claim 6 recites that the patterned ink layer has a light-reflecting function, and this claim does not in itself recite a light guide for back light. The Examiner's stated motivation for modification of the references appears to be based on use "as a light guide for LCDs". The Examiner has therefore not addressed the limitations of claim 6.

Applicants therefore assert that claims 1 and 6, and also claim 7, are novel and non-obvious over Akao et al. and Hironobu, taken separately or in combination.

Reconsideration of the rejections and objections is respectfully requested.

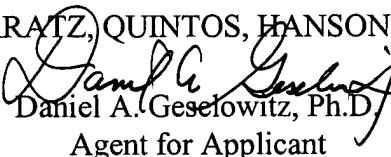
If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

U.S. Patent Application Serial No. 10/030,134
Response dated December 16, 2003
Reply to OA of **July 16, 2003**

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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Enclosure: "Concise Encyclopedia of Polymer Science and Engineering" by J. Kroschwitz

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